

H. GERNSBACK.  
 COMBINED ELECTRIC HAIR BRUSH AND COMB.  
 APPLICATION FILED SEPT. 12, 1911.

1,016,138.

Patented Jan. 30, 1912.

2 SHEETS—SHEET 1.

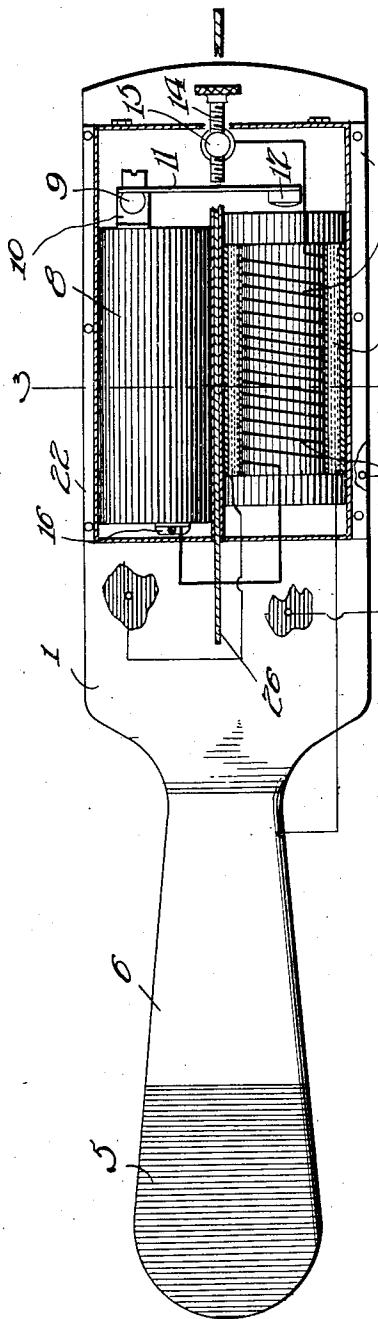


Fig. 1

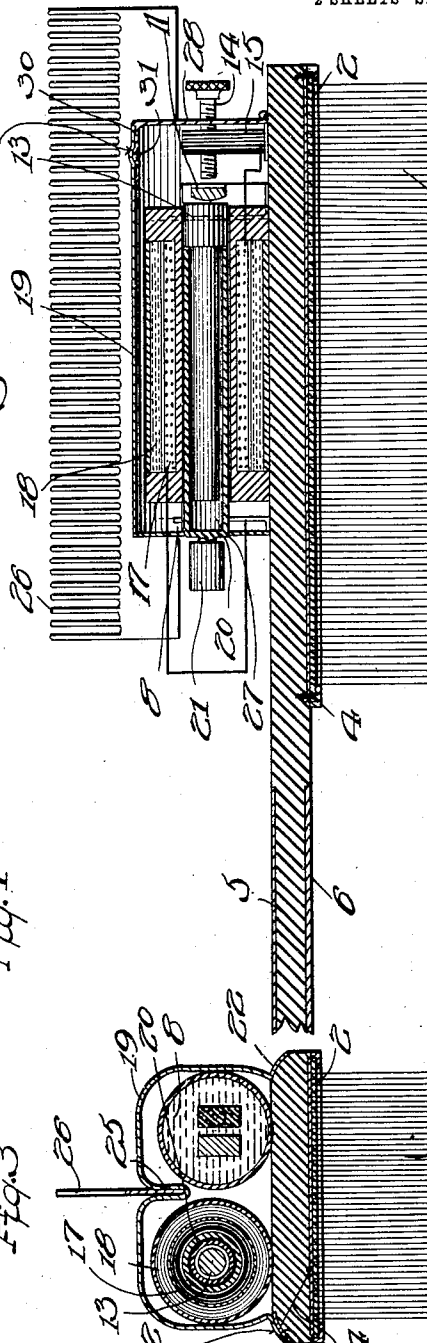
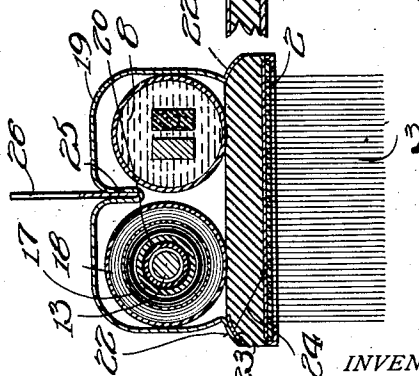


Fig. 2

Fig. 3



WITNESSES

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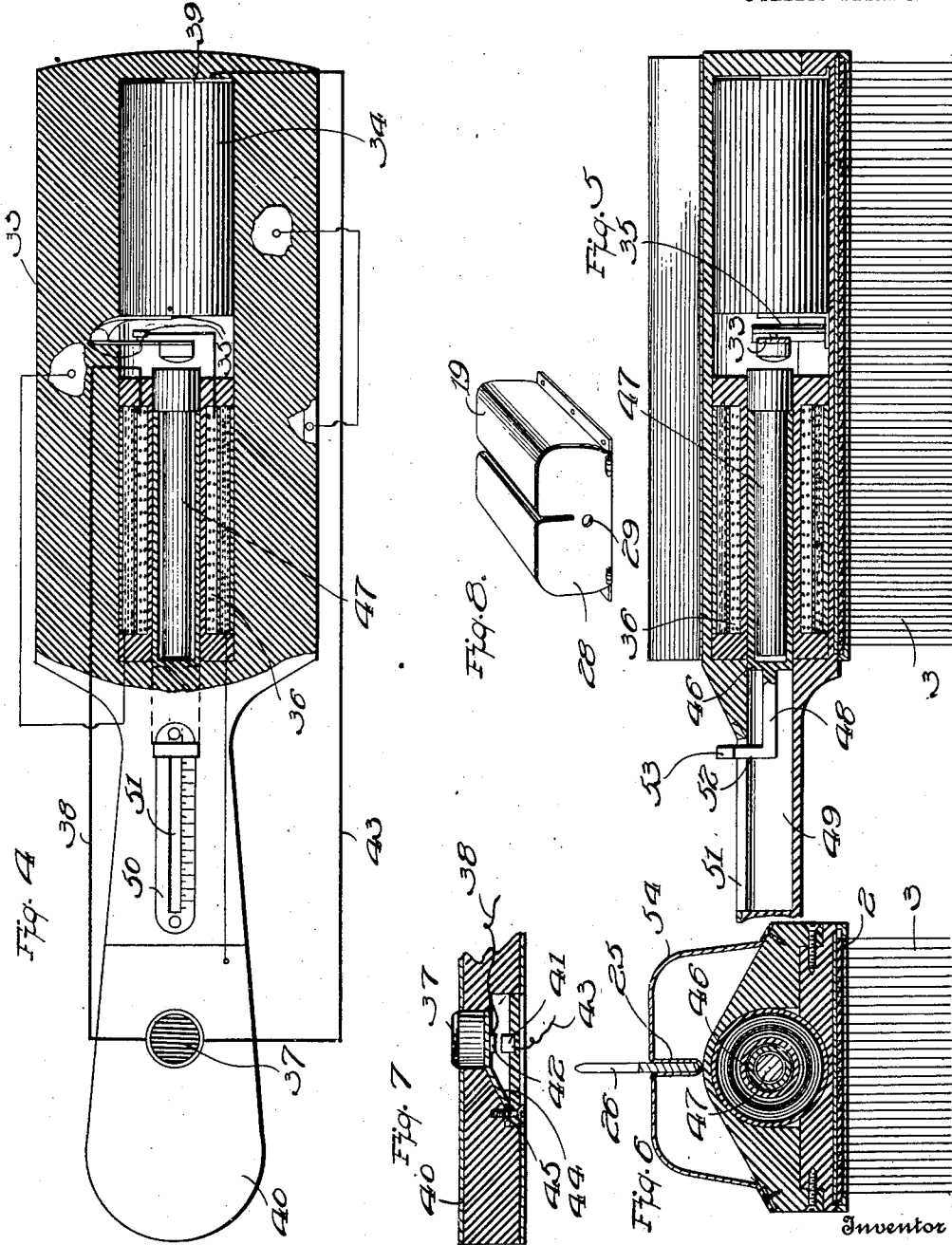
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2 SHEETS—SHEET 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

HUGO GERNSBACK, OF NEW YORK, N. Y.

COMBINED ELECTRIC HAIR BRUSH AND COMB.

1,016,138.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, HUGO GERNSBACK, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Combined Electric Hair Brushes and Combs, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to electric brushes and massage instrument combined and has for its object the production of a brush which is capable of securely holding a comb upon the back thereof so as to be in the electric circuits with the other portion of the brush.

Another object of this invention is the production of a brush which may also be used as a massage instrument.

With these and other objects in view this invention consists of certain novel constructions, combinations and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings Figure 1 is a plan view of the brush showing the protecting casing in section. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a transverse central section taken on the line 3—3 of Fig. 1. Fig. 4 is a top plan view partly in section of a modified form of my brush showing the battery and induction coil arranged in tandem. Fig. 5 is a longitudinal section of the form shown in Fig. 4. Fig. 6 is a transverse section thereof. Fig. 7 is a detail section taken through the contact button carried by the handle of the brush, and Fig. 8 is a detail perspective of the protecting casing adapted to cover the battery, solenoid and induction coil as illustrated in Figs. 1, 2 and 3.

Referring to the drawings by numerals 1 designates the body of the brush which carries upon its under surface a contact plate 2 from which protrude metal or contact bristles 3. The contact plate 2 is held in place by means of a frame 4 having its edges overlapping the edges of said frame 2. The handle 5 of the brush is also provided with a conducting plate 6 for allowing the circuit to be closed therethrough when gripped by the hand as will be hereinafter described.

In the preferred embodiment as illustrated in Figs. 1, 2 and 3, the induction coil 7 is carried upon the back of the brush having the battery, preferably of the dry type 8,

positioned to one side of said induction coil. A supporting post 9 is carried upon the back of the brush and contacts with one pole of the battery 8 through the medium of a contact plate 10. A vibrating arm 11 is connected to the post 9, and has its forward contact end 12 positioned so as to be attracted by the core 13 of the induction coil. A circuit closing screw 14 is supported by means of a post 15, said screw 14 being provided with a platinum end adapted to contact with the platinum portion formed upon the vibrating arm 11. The contact screw 14 also acts as a stopping means for limiting the vibrating movement of the vibrating arm 11, as well as closing the primary circuit. The opposite end of the battery 8 rests against a contact plate 16 to which is electrically connected the primary winding 17 of the induction coil. The primary winding is also electrically connected to the post 15 in the usual manner thereby making it possible to close the circuit from the positive post 9 through the vibrating arm 11, through the screw 14, and post 15 through the primary winding and back to the negative contact plate 16. The main or primary circuit will then be closed which will energize the secondary coil thereby sending a current through said coil when the circuit is closed through this medium as hereinafter described. The secondary winding or coil is electrically connected to the plate 2, and, of course, the bristles 3 and the opposite end of the secondary winding 18 is electrically connected to the contact plate 6 hereinbefore mentioned. The plate 2 is in turn electrically connected to the casing 19, which casing acts as a shield for the battery and induction coil. A metallic sleeve 20 is adjustably mounted upon the core 13 and is provided with a knob 21 for facilitating the regulating of said sleeve 20 upon the core 13. The sleeve 20 is graduated so as to allow the operator a better regulation. By pushing the sleeve into and out of said induction coil the intensity of the current flowing through the brush may be regulated.

The casing 19, mentioned above, is provided with laterally extending flanges 22, which fit snugly upon the back of the brush near the edges thereof. A conducting plate 23 is carried by one side of the brush or body 1 and this plate 23 is electrically connected to the plate 2 by means of a connection 24. The top of the casing 19 is comparatively

flat and is provided with a longitudinally extending depressed channel 25 which channel is adapted to receive a comb 26. Owing to the structure as illustrated in Fig. 3, and as just described, it will be obvious that a spring grip will be formed so as to firmly hold the comb 26 in position. The casing 19 is provided at its rear end with a closed wall having an aperture 27 through which is adapted to extend the core 20. The front end of the casing 19 is closed by means of a hinged door 28 having an aperture 29 through which aperture is adapted to fit the screw 14 hereinbefore mentioned. The door 28 is provided with an inwardly extending lip 30 which lip is provided with a humped portion 31 adapted to fit in a socket portion 32 for holding the door 28 in a closed position.

When the device is desired to be used the primary circuit is closed through the medium of the contact screw 14 thereby sending the current through the primary coil inducing the current in the secondary coil, thereby causing the current to pass through the bristles 3 and contact plate 6, as soon as the brush is gripped by the hand and the bristles brought in contact with the head. Of course, the device may be used as a massage instrument by using the casing 19 as a contact portion and by carefully considering Fig. 3, it will be obvious that when the comb 26 is removed from the casing 19, the channel 25 will form a means for receiving any foreign substance which might accumulate upon the face or other part of the body being massaged. In this way the face of the massage contact portion will be kept clean and as the comb is reinserted in the channel 25, the same will act as a cleaning means for said channel. Of course, when the device is used as a massage instrument the current will pass out from the contact plate, thence through the body to the casing 19 and from thence through the plate 2 to the bristles and from the bristles back to the secondary coil thereby completing the circuit.

As disclosed in Figs. 4, 5, 6, and 7 I have embodied a slightly different structure of the present invention wherein the induction coil and battery are arranged in tandem. A vibrating arm 33 is carried intermediate the induction coil and battery and is electrically connected to one pole of the battery 34. A contact point 35 is arranged adjacent said vibrating arm 33 and is adapted to normally form a contact therewith. This contact member 35 is electrically connected to the primary winding 36 of the induction coil and the opposite terminal of the primary coil or winding 36 is electrically connected to one contact portion of a push-button 37 by means of a conducting wire 38. The other terminal of the push-button

37 is electrically connected to the post 39 of the battery 34. The handle of the brush is covered with a conducting covering 40 and within the handle is carried a contact point 41 adapted to be engaged by a contact point 42 for closing the circuit through the wires 38 and 43, thereby energizing the primary winding 36. The button 37 is held in its normal position by means of a spring arm 44 which arm is connected at its rear end to the handle by means of a screw 45, which screw is insulated from the casing 40 above mentioned.

A sleeve 46 is slidably mounted upon the core 47 similar to that as illustrated in the preferred embodiment disclosed in Figs. 1, 2, and 3, and is adapted to act as a current regulator for the induction coil. The sleeve 46 is provided with a neck portion 48 which neck portion is adapted to travel in a slot 49 formed in the handle of the brush. A plate 50 is carried by the handle of the brush and is provided with a longitudinally extending slot 51 through which is adapted to extend the upwardly turned portion 52 of the neck 53. An enlarged head portion 53 is carried by the neck 58 for preventing the same from dropping through the slot 51. The edge of the slot 51 may be graduated as illustrated in Fig. 4 so that the exact degree of regulation may be obtained.

In the structure as illustrated in the embodiments as disclosed in Figs. 4, 5 and 6 the back is preferably formed of two sections so as to allow the induction coil and battery to be easily removed therefrom when it is so desired. A casing 54 similar to the casing 19 is supported by the back of the brush and in like manner is provided with a socket 25 for receiving the comb 26.

What I claim is:

1. An electric brush comprising a back having a series of metallic bristles, an induction coil carried by said back, a battery associated therewith, a contact plate carried by the handle of said brush, a housing enclosing said induction coil and battery being provided with a comb receiving socket extending longitudinally thereof being electrically connected to said bristles and induction coil and said contact plate and induction coil being electrically connected to said battery.

2. A brush of the class described provided with a protecting casing having a longitudinally extending comb receiving socket, said casing being capable of being used as a massage element and said longitudinally extending socket being adapted to receive any foreign material that might come in contact with said protecting casing.

3. An electric brush comprising a back having a series of metallic bristles, said back comprising a plurality of sections, an induction coil carried by said back, a battery as-

sociated therewith, said induction coil and battery being positioned between said sections of said back, a contact plate carried by the handle of said brush, a housing positioned upon said back and being provided with a comb receiving socket, said housing being electrically connected to said bristles and induction coil, said contact plate and induction coil being electrically connected with said battery, means for regulating the strength of the current passing through said brush, a circuit closing button carried by said handle, a contact spring supporting

said button, an insulating plate carried within said handle and supporting a contact stud, and means electrically connecting said contact button and stud whereby a current will be sent through the bristles of said brush. 15

In testimony whereof I hereunto affix my signature in presence of two witnesses. 20

HUGO GERNSBACK.

Witnesses:

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J. F. BOUKER.